

RESPONSE TO LTWG15-AI11 -- USGS (Steve Labahn) to investigate whether code from LACS to do L5 rudimentary scan alignment prior to browse image generation can be extracted, modularized, and made available to ICs. (Reference slide 6 of RESTEC Station Report)

After the usual scan alignment and before subsampling for Moving Window Display (MWD) or browse generation, bumper mode (which started on day 121 of 2002) requires an additional forward and reverse adjustment (note that scan direction is 0 for forward and 1 for reverse) :

```
if ( bumper_flag )
{
    int madj= ( scan_direction ) ? bumper_adj_rev : bumper_adj_fwd;
    adjust_mwdline(mwd_data,&img_data[iline*RAW_outsize],madj,
                    RAW_outsize,scan_direction);
    subsamp((char*)sampline,(char*)&mwd_data[0], RAW_outsize,subsamplex);
}
else
    subsamp((char*)sampline,(char*)&img_data[iline*RAW_outsize],
            RAW_outsize,subsamplex);
```

The `adjust_mwdline()` routine performs the additional alignment. [Note that this routine's name is a little misleading. The routine doesn't apply to just the MWD, but also applies to alignment and subsamples for output to browse products.] :

```
// ****
// ***** adjust_mwdline() ****
// ***      this function adds the bumper mode mwd adjustments   ***
// ****
void adjust_mwdline(unsigned char* mwd_data, const unsigned
                     char* img_data, int adj, int size, int dir)
{
    int data_off, fill_off, input_off;
    if ( dir )                                // *** if scan direction
    {
        data_off= 0;                          // *** data_offset pointer
        fill_off= size-adj;                  // *** zero fill offset
        input_off= adj;                      // *** input offset
    }
    else
    {
        data_off= adj;                      // *** data_offset pointer
        fill_off= 0;                        // *** data_offset pointer
        input_off= 0;                      // *** input offset
    }
    memset(&mwd_data[fill_off],0,adj );
    memcpy(&mwd_data[data_off],&img_data[input_off],(size-adj));
}
```

The bumper mode adjustment factors are:

bumper_adj_fwd	=	35
bumper_adj_rev	=	34

End of response.